

## **REMARKS/ARGUMENTS**

Claims 1, 4-8, 10-14, and 16-18 have been examined and finally rejected. The present response accompanies a Request for Continued Examination. The included remarks are believed to overcome all of the grounds of rejection. A Rule 132 Declaration is also included. Reconsideration and allowance of all pending claims are respectfully requested.

Claims 1, 4, 5, and 7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Pub. No. 2002/0021864 by Emori, et al., (hereinafter "Emori") in view of a publication by Namiki, et al., (hereinafter "Namiki") and further in view of U.S. Patent No. 6,292,288 issued to Akasaka, et al. (hereinafter "Akasaka"). Emori is cited as disclosing, e.g., groups of N and N+1 optical pump energy sources to induce Raman amplification. Namiki is cited as teaching selection of pump wavelengths to obtain a flat gain spectrum. Akasaka is cited as teaching alternating pump wavelengths between forward and backward directions.

No reference, however, has been shown to teach the limitations of claim 1 in an integrated system that achieves flat amplification response by virtue of the use of N pump wavelengths in a first direction, N+1 pump wavelengths in a second direction where the wavelengths alternate between the first group and the second group. It is respectfully submitted that it would not have been obvious to combine the teachings of the references cited against claim 1 for at least the reason that surprising results are obtained by the recited combination of features. Support for this contention is found in the accompanying Declaration Under Rule 132 by Ada Braverman.

The combination of gain and gain flatness provided by embodiments of the present invention represents a surprising result that defeats any contention that the references relied upon by the Examiner would have been obvious to combine. The multiple objectives of gain, gain flatness, and bandwidth are achieved by relying on the recited features of claim 1 including the use of N pumps in one pumping direction and N+1 pumps in the other pumping direction where the pump wavelengths alternate between directions.

Because the references would not have been obvious to combine, the rejection of claim 1 is overcome. Claim 1 is therefore allowable over the art of record. Claims 4, 5, and 7 are allowable for at least the reason of their dependence from claim 1.

Claims 8, 10-14, and 16-18 have been rejected under 35 U.S.C. §103(a) as being obvious over Akasaka in view of Emori. As a threshold matter, independent claims 8 and 14 recite that pump wavelengths are selected to flatten amplification response. This feature is neither disclosed nor suggested by the Akasaka and Emori references. This deficiency is sufficient to defeat the rejection.

Furthermore, it would not be obvious to combine the Akasaka and Emori teachings for the same reasons discussed in reference to claims 1, 4, 5, and 7. Favorable and unexpected results are obtained by embodiments of the present invention as indicated by the simulations discussed in the Declaration. This is further reason for the allowability of independent claims 8 and 14. Claims 10-13 and 16-18 are allowable for at least the reason of their dependence from allowable claims 8 and 14.

### **Conclusion**

For the foregoing reasons, Applicant believes all the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned at (408) 446-8694.

Respectfully submitted,



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